

of zinc for its maximum growth than does the latter. He believes that the variation in zinc optimum found by different workers for this species can be explained in part by the difference in the strains, and in part by the difference in the composition of the cultural vessels used. He thinks that pyrex glass, if free from zinc, may bear other substances that stimulate slightly, and that gradual dissolution of these from the glass may account for the continual decrease in yield when cultures are repeated many times in the same flasks. He also admits that other unknown factors may account for this. He thinks it probable that this species has never been grown in total absence of zinc.—WM. CROCKER.

Multiple eggs in bryophytes.—FLORIN,⁴ studying the archegonium of *Riccardia pinguis*, finds the axial row very variable. One archegonium contained an axial row of 4 cells, all of which had developed into eggs; another contained a single egg, 2 ventral canal cells, and 2 rows of neck canal cells; still another contained 4 eggs in the venter after the canal cells had completely disintegrated. Such so-called abnormalities are frequent in bryophytes, making it increasingly clear that both the antheridium and the archegonium are derived from a common gametangium, and that the archegonium occasionally reverts to that time when multiple eggs were the rule instead of the exception. Some mosses revert to a time still more distant, a time when both male and female gametes were present in the same gametangium, since we occasionally find both spermatogenous and oogenous cells in the same sex organ, which usually has the external form of an archegonium.—W. J. G. LAND.

Tyrosinase of fungi.—DODGE⁵ has made a very careful chemical study of the action of tyrosinase on tyrosin. He obtained his enzyme from *Daedalis confragosa*, *Armillaria mellea*, and *Polyporus sulphureus*. He finds (1) that the tyrosin molecule is not deaminized, and (2) that in the formation of the colored compounds the tyrosin molecules are combined into larger molecules, accompanied by the masking of the carboxyl groups.—J. J. WILLAMAN.

Absorption of gold.—The ability of *Penicillium glaucum* and *Oidium lactis* to develop from conidia in colloidal gold solutions to which tannic acid or gum arabic has been added has been studied by Miss WILLIAMS.⁶ The colloidal gold is slowly removed from solution during growth, removal being effected by the uncuticularized walls. The gold did not enter the protoplasm. No satisfactory explanation of the phenomena was found.—C. A. SHULL.

⁴ FLORIN, RUDOLF, Das Archegonium der *Riccardia pinguis* (L) B.Gr. Svensk. Bot. Tidskr. 12:464-470. figs. 4. 1918.

⁵ DODGE, C. W., Tyrosin in the fungi: chemistry and methods of studying the tyrosinase reaction. Ann. Mo. Bot. Gard. 6:71-92. 1919.

⁶ WILLIAMS, MAUD, Absorption of gold from colloidal solution by fungi. Ann. Botany 32:531-534. 1918.